

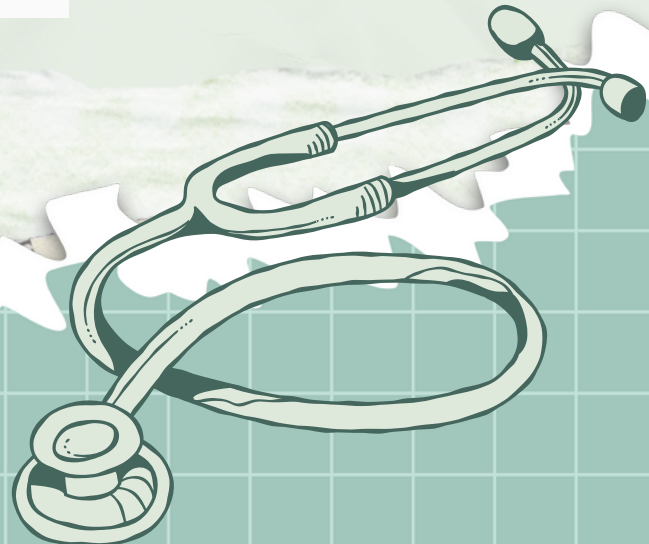


Clinical Skills 1

Title: Physical Examination 3

Done By: Joseph Abulail

وَقُلْ رَبِّ زِدْنِي عِلْمًا





Clinical Skills 1

As mentioned before, we generally start the proper physical exam of the patient after forming the differential diagnosis, but in reality we start the differential diagnosis from the moment we see the patient. They are part of your objective description of the patient.



3.2

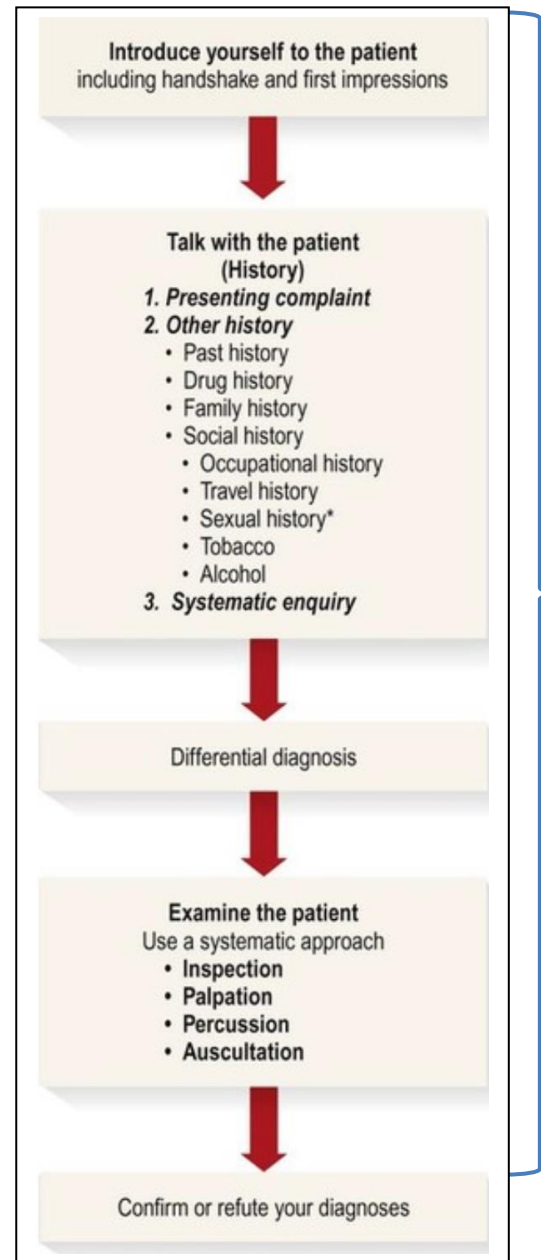
A personal system for performing a physical examination

- Handshake and introduction
- Note general appearances while talking:
 - Does the patient look well?
 - Any immediate and obvious clues, e.g. obesity, plethora, breathlessness
 - Complexion
- Hands and radial pulse

Note: you do not have to follow a certain rule or system as long as you do not forget or miss anything, so you can make your own system, however; we will discuss what MacLeod says.

When you do any physical exam (lump, lymph node, general exam), you need to start the physical exam with what is listed above.

In this lecture, we will talk about things that can be quantified.



Physical Exam Beginning and End



Clinical Skills 1

First: Consciousness

One of the things that can be measured to see if the patient is awake and cooperative is consciousness via the Glasgow Coma Scale.

Is the patient Alert/ lethargic/ obtunded/ stuporous/ sleepy/ comatose/ totally unresponsive? You can use these words when you first meet a patient.

However; if you want to objectively assess and quantify the patient's consciousness you can use a system like the Glasgow Coma Scale (important for MCQ).

Why to quantify consciousness? Because it can indicate the level of mortality, people who are 8 or less are said to be in a coma, and the possibility of survival is decreased.

GLASGOW COMA SCORE

Eye(s) Opening

| | |
|-------------|---|
| Spontaneous | 4 |
| To speech | 3 |
| To pain | 2 |
| No response | 1 |

Verbal Response

| | |
|---------------------------------|---|
| Oriented to time, place, person | 5 |
| Confused/disorientated | 4 |
| Inappropriate words | 3 |
| Incomprehensible sounds | 2 |
| No response | 1 |

Best Motor Response

| | |
|-----------------------------|---|
| Obeys commands | 6 |
| Moves to localised pain | 5 |
| Flexion withdraws from pain | 4 |
| Abnormal flexion | 3 |
| Abnormal extension | 2 |
| No response | 1 |

| | |
|-----------------------------|-----------|
| <i>Best response</i> | 15 |
| <i>Comatose patient</i> | 8 or less |
| <i>Totally unresponsive</i> | 3 |

So we see how much unconscious they are.

Example question: an 18-year-old patient comes to the ER after a car accident, he opens his eyes when you squeeze his arm, he flexes away from the pain, and speaks in a confused manner. The patient is?

- A) Sleepy
- B) Comatose



Clinical Skills 1

Second: Hydration

Hydration is extremely important. Our bodies are mainly water (60%, differs between male and female and differs by age). Water is crucial for maintaining metabolism (you need 1 cc of water for every 1 kilocalorie you want to metabolize) and crucial for maintaining circulation.

In addition, in most human diseases, problems of hydration occurs with these problems (for example in diarrhea the patient may be under-hydrated, in kidney disease the patient can be over hydrated). So, we must be able to quantify hydration; we can say from the first moment we see the patient that he is dehydrated, but we must quantify it.

- Dehydration
 - Not enough water
 - Difficult to assess
 - Easy to underestimate fluid loss
- Overhydration
 - Too much water
 - More evident than dehydration

Dehydration is difficult to assess and easy to underestimate fluid loss (we say the patient lost 1 liter by physical exam, but really he lost 3 liters).

People can be overhydrated, more evident: you get crackles in the lungs (fluid in the lungs) and the patient is swollen, especially in their legs.



Clinical Skills 1

- Weight (1 L = 1 kg)
- Pulse rate and quality (>100)
- Blood pressure (low, falls >15 mmHg when upright)
- Skin and soft tissues (sunken eyes, dry mucous membranes, loss of skin turgor)



We can look for dehydration at skin and the soft tissues.

One of the ways we can assess dehydration is by pinching the skin, and normally if there is no hydration the skin would go back to normal, if there is hydration the skin would stay pinched as in the picture; this is called **Skin Turgor**. However; we cannot assess dehydration this way until the patient is highly dehydrated.

Then what are better ways to assess dehydration?

- 1) Weight: if we know someone's baseline weight, we can use it to measure the amount of dehydration. If someone's normal weight is 75 kg, and he comes to the ER very thirsty and suddenly his weight is 73 kg, we know he lost 2 kg of water. (big weight changes indicate water gain or loss)
- 2) Pulse rate: faster pulse means more dehydrated considering nothing else is causing a fast pulse. Also if it's weak.
- 3) Blood pressure: especially orthostatic blood pressure (when we measure the blood pressure of a patient lying flat, and then the patient sitting, and then the patient standing up), if there is orthostatic hypotension (meaning the systolic blood pressure falls by 15 mmHg when the patient stands), then the patient is dehydrated. **When you return the hydration status to normal, it reverses these signs and symptoms.**

All the above signs must disappear on proper hydration of the patient whether IV fluids or oral intake.



Clinical Skills 1



- Weight
- Edema (gravity pulls to dependent areas, not always due to fluid overload)
- Jugular venous pressure (JVP)

We can look for dehydration in different aspects of the body:

- 1) Weight: large increases in weight over a short period of time is typical of increased fluid. Most reliable way to see if the patient lost or gained fluid.
- 2) We notice it by edema, particularly pitting edema. Meaning (as in the picture) if we press with our finger on an area, wait for two seconds, and then an indentation comes, this is called "pitting edema".

Gravity always pulls water to dependent areas, not always due to edema, and not always in the feet but can also be in the sacrum and lower back if the patient is sleeping for too long.

Also check jugular venous pressure, if elevated, indicates too much fluid.



Clinical Skills 1

Lumps, Bumps, Swellings

Sometimes the patient comes to us with a lump or swelling in any area of the body. Most patients think it is cancer, we need to differentiate if the mass is malignant or not.

Space SPIT is a helpful mnemonic to help us describe the lump.

- 1) Size
- 2) Position
- 3) Attachment: this includes attachment to the underlying structures and attachment to the skin. If the mass is attached, it is more likely to be malignant, if it is not attached, it is less likely to be malignant.
- 4) Consistency: Soft and rubbery is less concerning for cancer, while something hard as a rock is more likely to be cancer.
- 5) Edge: if there is a smooth edge and easy to find, then the mass is likely to be malignant.



3.11

Features to note in any lump or swelling (SPACESPIT)

- Size
 - Position
 - Attachments
 - Consistency
 - Edge
 - Surface and shape
 - Pulsation, thrills and bruits
-
- Inflammation
 - Redness
 - Tenderness
 - Warmth
 - Transillumination

6) Surface and shape: A more round and regular surface and shape reassures us that this is not malignant/cancer. If the mass has an irregular shape, with multiple tentacles branching out from the mass and attached to the underlying tissue makes us concerned.

7) Pulsation: In that case, it is a vascular mass like a swollen blood vessel, sometimes it has a sound as a thrill or bruits because blood flows strongly



Clinical Skills 1

How to do it?

Inspect: First we look at it and find if it has discoloration.

Palpation: touch it and measure it. Also palpate for tenderness and temperature (with the back of the hand,), assess pulse, consistency and surface. Also check margins. Pick up skin and move the lump in different planes and see if it is fixed.

Compress the lump on one side (fluctuation), a fluid consistency could do that. See if the fluctuation is in two places or not. Could be a fluid cyst, an abscess, or a soft tumor like a lipoma.

Auscultate: Put a stethoscope over the mass and hear bruits (vascular)

Trans illumination.

Examine and describe via SPACE SPIT

Examination sequence

- Inspect the lump, noting any change in colour or texture of the overlying skin.
- Define the site and shape of the lump.
- Measure its size and record the findings diagrammatically.
- Gently palpate for tenderness or change in skin temperature.
- Feel the lump for a few seconds to determine if it is pulsatile.
- Assess the consistency, surface texture and margins of the lump.
- Try to pick up an overlying fold of skin to assess whether the lump is fixed to the skin.
- Try to move the lump in different planes relative to the surrounding tissues to see if it is fixed to deeper structures.
- Compress the lump on one side; see and feel if a bulge occurs on the opposite side (fluctuation). Confirm the fluctuation in two planes. Fluctuation usually indicates that the lump contains fluid, although some soft lipomas can feel fluctuant.
- Auscultate for vascular bruits.
- Transilluminate.

One of the specific examples of masses are lymph nodes. Lymph nodes can enlarge due to a variety of reasons and present as a mass.

- 1) If you have an infection in an area, then the lymph node draining the area can get inflamed, tender, red, and enlarged.
- 2) Sometimes lymph nodes can drain cancer, here it is enlarged but not tender and inflamed.



Clinical Skills 1

How to do it?

Like any mass examination but with additional clues.

Compare each side because lymph nodes are symmetrical, meaning if you check the right cervical you compare them to the left cervical.

Do SPACE SPIT.

Abscessed nodes or enlarged node to infection in the area.

Where to start?

Lymph nodes are all over the body but we usually start from the **head and neck lymph nodes**.

For the **cervical and axillary nodes** the patient must be sitting down.

From behind the patient: examine the submental nodes, submandibular nodes, the pre-auricular nodes and the tonsillar nodes. Look at the supraclavicular and deep cervical nodes that are in front of and behind the sternocleidomastoid and behind the clavicle, respectively.

Axillary Nodes: relax the patient with the arms at the side, then we push our fingers up at the apex of the axilla, and then slowly move them downward by pressing at the lymph nodes, to see the medial, posterior, and anterior axillary nodes.

Examination sequence

General principles

- Inspect for visible lymphadenopathy.
- Palpate one side at a time using the fingers of each hand in turn.
- Compare with the nodes on the contralateral side.
- Assess:
 - site
 - size.
- Determine whether the node is fixed to:
 - surrounding and deep structures
 - skin.
- Check consistency.
- Check for tenderness.

Cervical nodes

- Examine the cervical and axillary nodes with the patient sitting.
- From behind, examine the submental, submandibular, preauricular, tonsillar, supraclavicular and deep cervical
- Gently place your fingertips into the apex of the axilla and then draw them downwards, feeling the medial, anterior and posterior axillary walls in turn.

Epitrochlear nodes

- Support the patient's right wrist with your left hand, hold his partially flexed elbow with your right hand and use your thumb to feel for the epitrochlear node. Examine the left epitrochlear node with your left thumb (Fig. 3.23B).

Inguinal nodes

- Examine for the inguinal and popliteal nodes with the patient lying down.
- Palpate over the horizontal chain, which lies just below the inguinal ligament, and then over the vertical chain along the line of the saphenous vein (Fig. 3.23C).



Clinical Skills 1

Then we examine the **epitrochlear nodes**.

We support the patient's right wrist with our left hand and we hold the partially flexed hand with our right hand and use the thumb to examine the area.

Inguinal node:

Do not do them just say them at the OSCE

Then the **popliteal nodes**: also just say them at the OSCE station.



A



B



C



A



B



C



Clinical Skills 1

Summary

- When you see the patient, you will have an impression
- Better define that impression by specifically describing certain aspects of your observations
- From today, make note of:
 - Consciousness
 - Hydration status
 - Lumps
 - Lymph nodes
- Always remember the general examination sequence:
 - Inspection
 - Palpation
 - Percussion
 - Auscultation